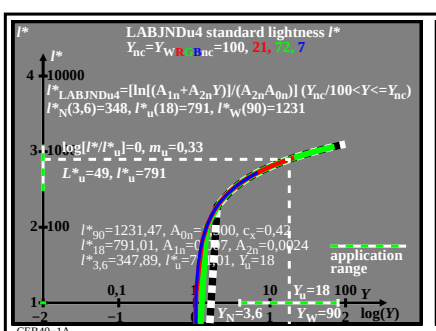
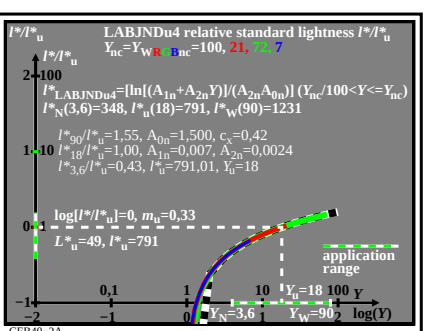
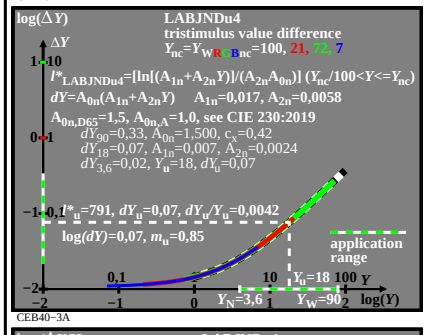
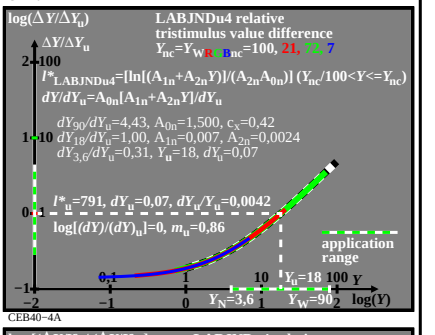
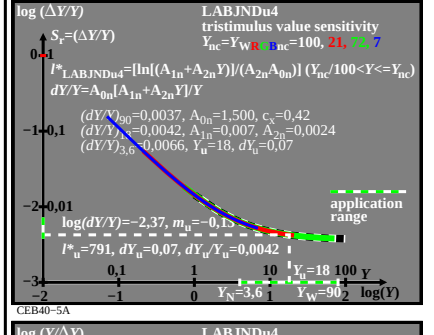
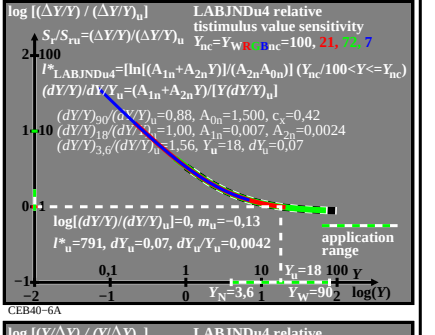

l*
LABJNDu4 standard lightness l*
Ync=YWRGBnc=100, 21, 72, 7
l*LABJNDu4=[ln((A1n+A2nY)]/(A2nA0n)] (Ync/100<Y<=Ync)
l*N(3,6)=348, l*u(18)=791, l*W(90)=1231
log[l*/l*u]=0, mu=0,33
L*u=49, l*u=791
l*90=1231,47, A0n=1,500, cx=0,42
l*18=791,01, A1n=0,007, A2n=0,0024
l*3,6=347,89, l*u=791,01, Yu=18
application range
Yu=18 100 Y
YN=3,6 1
YW=90 2 log(Y)
CEB40-1A

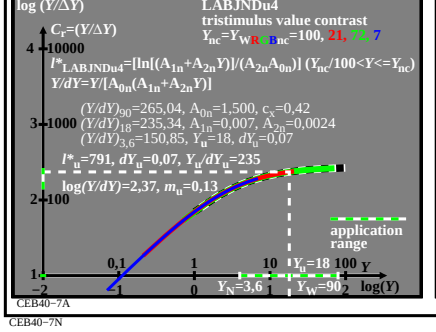

l*/l*u
LABJNDu4 relative standard lightness l*/l*u
Ync=YWRGBnc=100, 21, 72, 7
l*LABJNDu4=[ln((A1n+A2nY)]/(A2nA0n)] (Ync/100<Y<=Ync)
l*N(3,6)=348, l*u(18)=791, l*W(90)=1231
l*90/l*u=1,55, A0n=1,500, cx=0,42
l*18/l*u=1,00, A1n=0,007, A2n=0,0024
l*3,6/l*u=0,43, l*u=791,01, Yu=18
log[l*/l*u]=0, mu=0,33
L*u=49, l*u=791
application range
Yu=18 100 Y
YN=3,6 1
YW=90 2 log(Y)
CEB40-2A

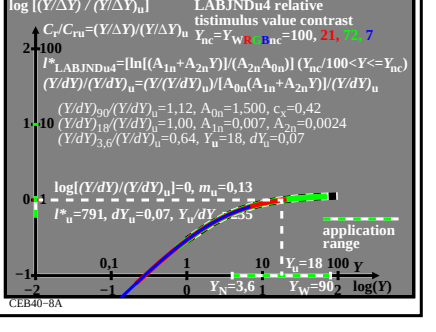

log(ΔY)
ΔY
LABJNDu4
tristimulus value difference
Ync=YWRGBnc=100, 21, 72, 7
l*LABJNDu4=[ln((A1n+A2nY)]/(A2nA0n)] (Ync/100<Y<=Ync)
dY=A0n(A1n+A2nY) A1n=0,017, A2n=0,0058
A0n,D65=1,5, A0n,A=1,0, see CIE 230:2019
dY90=0,33, A0n=1,500, cx=0,42
dY18=0,07, A1n=0,007, A2n=0,0024
dY3,6=0,02, Yu=18, dYu=0,07
l*u=791, dYu=0,07, dYu/Yu=0,0042
log(dY)=0,07, mu=0,85
application range
Yu=18 100 Y
YN=3,6 1
YW=90 2 log(Y)
CEB40-3A


log(ΔY/ΔYu)
ΔY/ΔYu
LABJNDu4 relative
tristimulus value difference
Ync=YWRGBnc=100, 21, 72, 7
l*LABJNDu4=[ln((A1n+A2nY)]/(A2nA0n)] (Ync/100<Y<=Ync)
dY/dYu=A0n[A1n+A2nY]/dYu
dY90/dYu=4,43, A0n=1,500, cx=0,42
dY18/dYu=1,00, A1n=0,007, A2n=0,0024
dY3,6/dYu=0,31, Yu=18, dYu=0,07
l*u=791, dYu=0,07, dYu/Yu=0,0042
log[(dY)/(dY)u]=0, mu=0,86
application range
Yu=18 100 Y
YN=3,6 1
YW=90 2 log(Y)
CEB40-4A


log (ΔY/Y)
Sr=(ΔY/Y)
LABJNDu4
tristimulus value sensitivity
Ync=YWRGBnc=100, 21, 72, 7
l*LABJNDu4=[ln((A1n+A2nY)]/(A2nA0n)] (Ync/100<Y<=Ync)
dY/Y=A0n[A1n+A2nY]/Y
(dY/Y)90=0,0037, A0n=1,500, cx=0,42
(dY/Y)18=0,0042, A1n=0,007, A2n=0,0024
(dY/Y)3,6=0,0066, Yu=18, dYu=0,07
log(dY/Y)=−2,37, mu=−0,13
l*u=791, dYu=0,07, dYu/Yu=0,0042
application range
Yu=18 100 Y
YN=3,6 1
YW=90 2 log(Y)
CEB40-5A


log [(ΔY/Y) / (ΔY/Y)u]
Sr/Sru=(ΔY/Y)/(ΔY/Y)u
LABJNDu4 relative
tristimulus value sensitivity
Ync=YWRGBnc=100, 21, 72, 7
l*LABJNDu4=[ln((A1n+A2nY)]/(A2nA0n)] (Ync/100<Y<=Ync)
(dY/Y)/dY/Yu=(A1n+A2nY)/[Y(dY/Y)u]
(dY/Y)90/(dY/Y)u=0,88, A0n=1,500, cx=0,42
(dY/Y)18/(dY/Y)u=1,00, A1n=0,007, A2n=0,0024
(dY/Y)3,6/(dY/Y)u=1,56, Yu=18, dYu=0,07
log[(dY/Y)/(dY/Y)u]=0, mu=−0,13
l*u=791, dYu=0,07, dYu/Yu=0,0042
application range
Yu=18 100 Y
YN=3,6 1
YW=90 2 log(Y)
CEB40-6A


log (Y/ΔY)
Cr=(Y/ΔY)
LABJNDu4
tristimulus value contrast
Ync=YWRGBnc=100, 21, 72, 7
l*LABJNDu4=[ln((A1n+A2nY)]/(A2nA0n)] (Ync/100<Y<=Ync)
Y/dY=Y/[A0n(A1n+A2nY)]
(Y/dY)90=265,04, A0n=1,500, cx=0,42
(Y/dY)18=235,34, A1n=0,007, A2n=0,0024
(Y/dY)3,6=150,85, Yu=18, dYu=0,07
l*u=791, dYu=0,07, Yu/dYu=235
log(Y/dY)=2,37, mu=0,13
application range
Yu=18 100 Y
YN=3,6 1
YW=90 2 log(Y)
CEB40-7A


log [(Y/ΔY) / (Y/ΔY)u]
Cr/Cru=(Y/ΔY)/(Y/ΔY)u
LABJNDu4 relative
tristimulus value contrast
Ync=YWRGBnc=100, 21, 72, 7
l*LABJNDu4=[ln((A1n+A2nY)]/(A2nA0n)] (Ync/100<Y<=Ync)
(Y/dY)/(Y/dY)u=(Y/(Y/dY)u)/[A0n(A1n+A2nY)]/(Y/dY)u
(Y/dY)90/(Y/dY)u=1,12, A0n=1,500, cx=0,42
(Y/dY)18/(Y/dY)u=1,00, A1n=0,007, A2n=0,0024
(Y/dY)3,6/(Y/dY)u=0,64, Yu=18, dYu=0,07
log[(Y/dY)/(Y/dY)u]=0, mu=0,13
l*u=791, dYu=0,07, Yu/dYu=235
application range
Yu=18 100 Y
YN=3,6 1
YW=90 2 log(Y)
CEB40-8A

CEB40−7N